MANAGEMENT TOOLS

GANTT CHARTS (BAR CHARTS)

Bar charts are the most common project control tool used in the construction industry. An example is shown in Fig. 2. In many cases, it is the only aid used. Perhaps the reason for this popularity is its simplicity, almost universal understanding, and ability to be used at all levels of supervision. Some of the shortcomings of bar charts include the following:

* Do not force detailed analysis and breakdown of activities.
* Do not model interdependencies of tasks.
* Greater likelihood that activities will be omitted.
* Fail to communicate as much detailed information (sequential activities, activities critical to project completion, slack time, earliest and latest start time).
* Fail to adequately show consequences of scheduling deviations.
* Unsuitable for updating purposes.

NETWORKING TECHNIQUES

Networks such as critical path scheduling (CPS, see Fig. 3) and project evaluation and review technique (PERT) were developed to overcome disadvantages of bar charts. Networking is extremely useful in scheduling of construction projects from most complex to a simple job. In complex projects, a hierarchy of networks are developed to meet the needs of different levels of management.

It is important to remember that networks are dynamic and require continuous update from the lowest detail in order to be useful for project management. When considering the use of networks, their dynamic nature must be considered along with the labor and computer resources required to maintain the system. Complicated and expensive procedures for updating the network may result in a useless system and a burden on the project.

PERCENTAGE COMPLETION CURVES (S CURVES)

Percentage completion curves plot forecasted and actual cumulative percent completion on a time scale. For example, during construction plot cumulative labor hours forecasted and actual hours expended to date. See Fib. 4. A number of

different plots can be made including material, equipment, and costs by various breakdowns. Plot variables that dominate progress of the project.

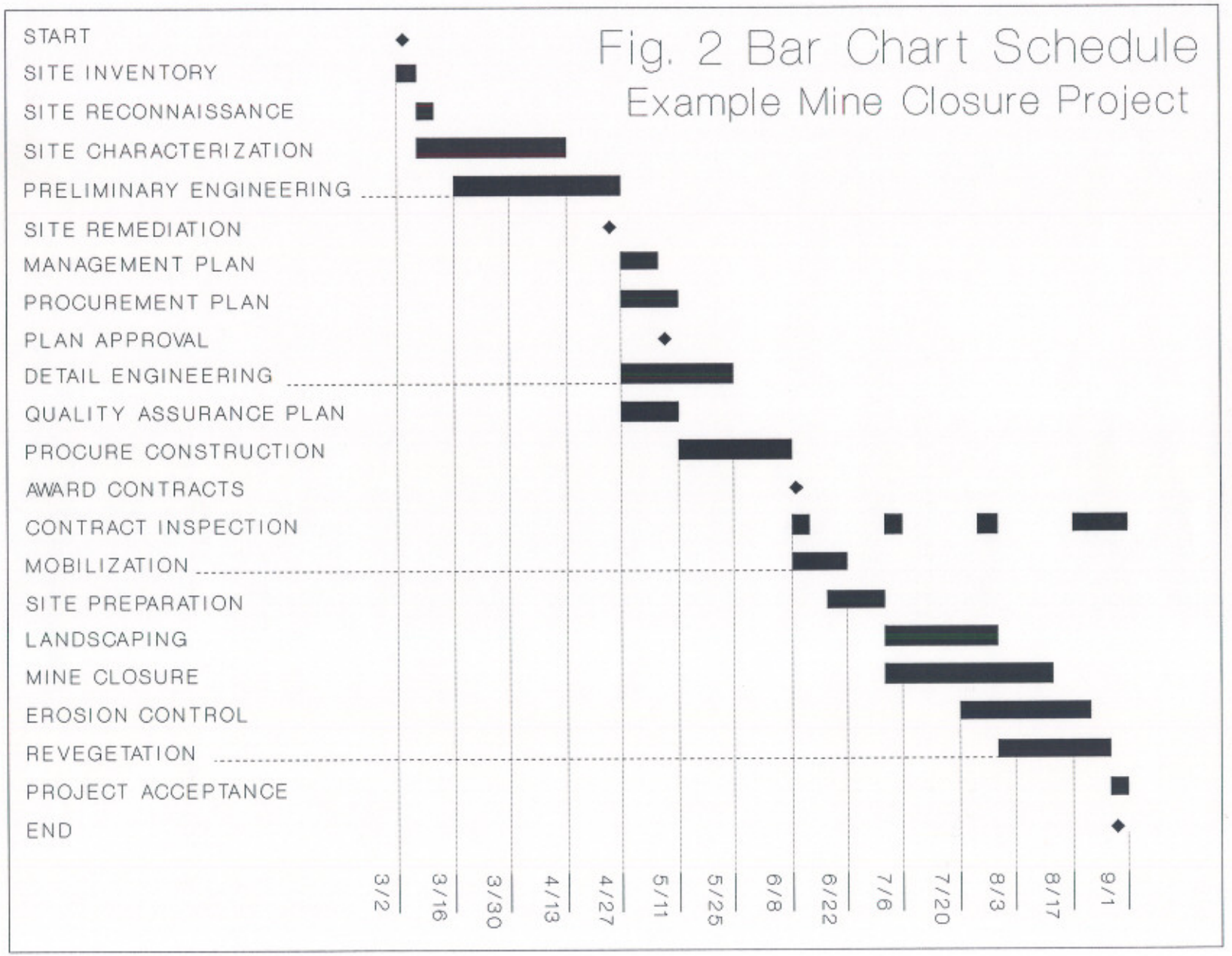

Fig. 2 Bar Chart Schedule
Example Mine Closure Project

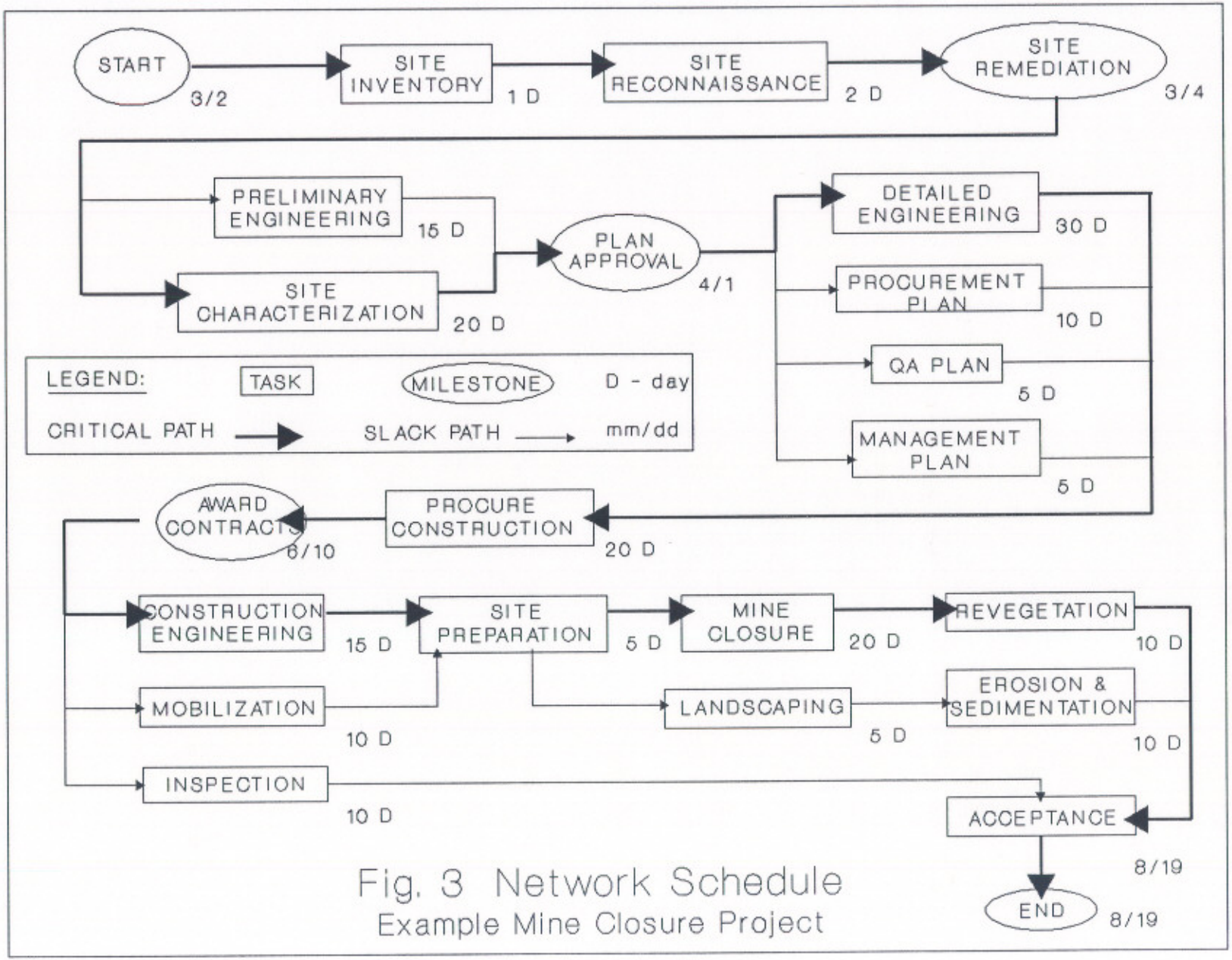

Fig. 3 Network Schedule
Example Mine Closure Project

Fig. 4 Cumulative Cost Graph

Example Mine Closure Project